

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 862.C1854

First Named Inventor or Application Identifier

HIROYUKI FUJIYOSHI

Express Mail Label No.

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

1. ☐ Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)

2. ☒ Specification Total Pages 53

3. ☒ Drawing(s) (35 USC 113) Total Sheets 9

4. ☒ Oath or Declaration Total Pages 1

- a. ☐ Newly executed (original or copy)
b. ☒ Unexecuted for information purposes
c. ☐ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 17 completed)
[Note Box 5 below]

i. ☐ **DELETION OF INVENTOR(S)**
Signed Statement attached deleting inventor(s)
named in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference (useable if Box 4c is checked)
The entire disclosure of the prior application, from which a copy of the
oath or declaration is supplied under Box 4c, is considered as being
part of the disclosure of the accompanying application and is hereby
incorporated by reference therein.

6. ☐ Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)

- a. ☐ Computer Readable Copy
b. ☐ Paper Copy (identical to computer copy)
c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS
Citations
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
14. ☐ Small Entity ☐ Statement filed in prior application
Statement(s) Status still proper and desired
15. ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. ☐ Other: _____

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. ____/____

18. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

05514
(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

NAME

Address

City

Country

State

Telephone

Zip Code

Fax



CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
TOTAL CLAIMS (37 CFR 1.16(c))		94-20 =	74	X \$ 18.00 =	\$1,332.00
INDEPENDENT CLAIMS (37 CFR 1.16(b))		8-3 =	5	X \$ 78.00 =	\$ 390.00
MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))				\$260.00 =	\$ 0.00
				BASIC FEE (37 CFR 1.16(a))	\$ 690.00
Total of above Calculations =					\$2,412.00
Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).					
TOTAL =					\$2,412.00

19. Small entity status

- a. ☐ A Small entity statement is enclosed
- b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.
- c. ☐ Is no longer claimed.

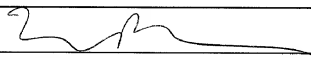
20. ☒ A check in the amount of \$ 2,412.00 to cover the filing fee is enclosed.

21. ☐ A check in the amount of \$ _____ to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

- a. ☒ Fees required under 37 CFR 1.16.
- b. ☒ Fees required under 37 CFR 1.17.
- c. ☐ Fees required under 37 CFR 1.18.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

NAME	Leonard P. Diana (Reg. No. 29,296)
SIGNATURE	
DATE	February 29, 2000

easy to display an actual document and its additional information with explicit indication of the relationship between them. If the actual document can be referred in the format or state in which it was stored in the

5 document management system, the above problem will be solved. However, in order to perform the above operation, it is necessary to ascertain the storage location of the document through a different method and the procedure involved is troublesome.

10 Furthermore, in a case where the document is referred to in the format in which it was stored in the document management system, there are instances where user registration is necessary in order to access the system in which the document exists. The result is poor
15 operability.

SUMMARY OF THE INVENTION -

Accordingly, an object of the present invention is
20 to make it possible to transmit specific information such as the storage location of a document (object) and access privilege without transmitting the actual substance of the object or a file in which the content of the object has been converted to an image, thereby
25 making it possible to display the document easily on the receiving side without increasing the load upon the

relating to the object designated by the designating means; and generating means for generating electronic mail information which includes the access information acquired by the acquisition means.

5 According to another aspect of the present invention, the foregoing objects are attained by providing an information processing apparatus capable of receiving electronic mail, comprising: extraction means for extracting access information contained in
10 electronic mail that has been received; access means for accessing an object based upon the access information extracted by the extraction means; and display means for presenting a display that corresponds to the object based upon content of the object accessed by the access
15 means.

 According to the present invention, the foregoing objects are attained by providing an information processing system in which electronic mail can be transmitted and received between information processing
20 apparatus, comprising: generating means for generating electronic mail which includes access information relating to an object to be attached to electronic mail; communication means for sending and receiving the electronic mail generated by the generating means; and
25 access means for accessing the object based upon the access information contained in the electronic mail

received via the communication means.

Other features and advantages of the present invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the figures thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

Fig. 1 is a system block diagram illustrating the configuration of an information processing system to which there is applied a scheme for giving notification of document storage information according to an embodiment of the present invention;

Fig. 2 is a block diagram showing the details of construction of a PC and database server in the information processing system which applies the scheme for giving notification of document storage information according to this embodiment;

Fig. 3 is a diagram showing an overview of a main

0015132.000100

window for displaying an at-a-glance view of objects in
a document management system or image management system
which applies a scheme for giving notification of
document storage information according to this

5 embodiment of the present invention;

Fig. 4 is a diagram illustrating an access-key
configuration screen;

Fig. 5 is a diagram illustrating an access-key
format, prior to encryption, generated based upon
10 content configured by the access-key configuration
screen shown in Fig. 4;

Figs. 6A, 6B and 6C are diagrams useful in
describing examples of screen displays, as well as the
operation thereof, in a case where a received access key
15 is used in the scheme for giving notification of
document storage information according to this
embodiment;

Fig. 7 is a flowchart useful in describing
processing for transmitting an access key according to
20 this embodiment; and

Figs. 8A and 8B are flowcharts illustrating
document display processing that is based upon an access
key.

25 DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention will now be described in detail in accordance with the accompanying drawings.

Fig. 1 is a system block diagram illustrating the configuration of an information processing system to which there is applied a scheme for giving notification of document storage information according to an embodiment of the present invention. The information processing system comprises at least two computers (PC-A 201 and PC-B 202), a database server 203 and an electronic mail server 204. The computers 201 and 202, which function as mail clients, can be ordinary personal computers or workstations. In this embodiment the database server 203 stores documents and the like to be transmitted by electronic mail. The electronic mail server 204 stores and distributes electronic mail that has been transmitted in the system. The computers 201, 202, database server 203 and main server 204 are connected by a network 205.

Fig. 2 is a block diagram showing the details of construction of a personal computer and database server in the information processing system which applies the scheme for giving notification of document storage information according to this embodiment. As shown in Fig. 2, a personal computer (PC) 300 corresponds to the personal computer 201 or 202 in Fig. 1. The PC 300

includes a display unit 301, an input unit 302, a central processing unit 303, an external storage device 304, a memory 305 and a network interface 306. A database server 310 corresponds to the database server 5 203 in Fig. 1 and includes a network interface 311, a central processing unit 312, a memory 313 and an external storage device 314. The network interfaces 306 and 311 are connected by a network cable.

The display unit 301 in the PC 300 has a CRT or LCD 10 and presents various displays under the control of the central processing unit 303. The input unit 302 includes a keyboard and a pointing device, for example, and is for making various inputs to the central processing unit 303. The central processing unit 303 15 implements various processing, described later, by executing a control program that has been stored in the memory 305. The external storage device 304 is a large-capacity non-volatile memory typified by a hard disk or the like. The memory 305, which is constituted by a RAM 20 or the like, provides a working area for the central processing unit 303. The network interface 306 is for making a connection to the Internet by a modem, etc., via a telephone line.

The network interface 311 in the database server 25 310 is for making a connection to the Internet, by way of example. The central processing unit 312 implements

various processing, described later, by executing a control program that has been stored in the memory 313. The external storage device 314 is a large-capacity non-volatile memory typified by a hard disk or the like.

5 Fig. 3 is a diagram showing an overview of a main window for displaying an at-a-glance view of objects in a document management system or image management system which applies a scheme for giving notification of document storage information according to this
10 embodiment.

Fig. 3 shows a main window 400. In Fig. 3, objects in a storage area α are displayed in a thumbnail format. In this example, there are two objects, namely A and B. It should be noted that the storage area α corresponds
15 to, e.g., a directory or folder. Buttons 401 are for selecting whether the format of the display presented in an at-a-glance display area 403 is the thumbnail format or a list format. Buttons 402 are for changing the storage area to be displayed in the at-a-glance view.
20 The at-a-glance display area 403 displays objects. More specifically, this is an area in which objects in the storage area selected by the buttons 402 are displayed in an at-a-glance view in a format (thumbnail or list) selected by the buttons 401. Fig. 3 illustrates a state
25 in which a thumbnail display has been selected. An icon 404 corresponds to an electronic mail application. An

object displayed as a thumbnail image or an icon
displayed in a list in the at-a-glance display area 403
may be dragged and dropped on the icon 404 of the
electronic mail application, thereby making it possible
5 to transmit electronic mail to which information
relating to this object has been attached.

It should be noted that an object that has been
dragged and dropped on the icon 404 of the electronic
mail application has version information. In a case
10 where the transmitting party has not allowed the
receiving side to access all versions, only an object
having the version information can be accessed. This
will become clear from a description rendered later.

Fig. 4 is a diagram illustrating an access-key
15 configuration screen 500 displayed when one object
displayed in at-a-glance form in Fig. 3 has been dropped
on the icon 404 of the electronic mail application.
This screen enables the setting of information necessary
to access the object and to store the information as an
20 access key. The object shall be referred to as a
document below. Moreover, in this specification, it
will be assumed that the document includes a text file,
an image file, etc.

The access-key configuration screen 500 shown in
25 Fig. 4 includes a user name 501 that makes it possible
to access this system (e.g., a database server in which

the applicable document resides). More specifically, in addition to users who have already been registered with the system, it is possible to set a special "access-key user". Thus, even a user who has not registered as a user with the database storing the document can, by having possession of an access key that includes "access-key user", refer to the document within the database. If "NONE" is selected in the area of user name 501, user-name and password queries are made when access to the database is attempted, whereby a person who has not registered as a user can be denied access to the database.

The access-key configuration screen 500 is configured in the following manner:

Area 502: Sets the privilege [to allow only read (reference) or to allow both read and write (update)] granted to the "access-key user" to access the applicable document.

Area 508: Sets the privilege to access other versions regarding the applicable document;

Area 503: Sets whether or not other documents in the folder containing the document can be displayed when the document is referred to using the access key. In a case where "DISPLAY ALL DOCUMENTS" has been checked, both the access privilege set in area 502 and the access privilege set in the area 508 are similarly validated

with regard to all documents.

Area 504: Sets whether or not a period of validity is to be set for the access key that has been created.

Area 505: Sets the period of validity.

5 If an OK button 506 is pressed (clicked) after the above-mentioned items have been set, an access-key file is created using the configured content being displayed on the access-key configuration screen 500 and the file is attached to an electronic mail file. If a cancel
10 button 507 is clicked, then processing is suspended without the creation of access-key file.

Fig. 5 is a diagram illustrating an access-key format 510 prior to encryption of an access-key file generated based upon content configured by the access-
15 key configuration screen shown in Fig. 4. Numeral 510 in Fig. 5 denotes the access-key format prior to encryption. Since the access key usually is encrypted, it cannot be referred to or edited directly by a text editor.

20 In Fig. 5, "ABSOLUTE STORAGE LOCATION OF DOCUMENT" is where the absolute storage location of a dropped document in the database system is set. "USER NAME" is either "ACCESS-KEY USER" or "NONE" entered in the area of user name 501. "PASSWORD" is where a password
25 established by the database system is set only in a case where an access-key user has been set. "ACCESS

PRIVILEGE" is set only in a case where "ACCESS-KEY USER" has been set. In this example, either "READ/WRITE" or "READ" is set. "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE FLAG" is where a value (enable/disable) specified using the check box area 508 in Fig. 4 is set. "SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG" is where a value (on/off) specified using the check box area 503 of Fig. 4 is set. "KEY-FILE VALIDITY DATE" is where the period of validity set in area 505 in Fig. 4 is saved only in a case where the check box area 504 of Fig. 4 is checked. "ID OF APPLICABLE DOCUMENT" is where the ID of the selected document is set in a form that includes the version number. If "SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG" is ON, the IDs of all documents present in the same folder are added on in a form that includes the version numbers.

Figs. 6A, 6B and 6C are diagrams useful in describing examples of screen displays, as well as the operation thereof, in a case where a received access key is used in the scheme for giving notification of document storage information according to this embodiment.

Fig. 6A shows a main window in which an at-a-glance view of documents in a storage area Z is displayed in thumbnail form. Here one document (C) is being displayed in an at-a-glance display area 601.

and B exist in the storage area α in the personal computer on the transmitting side and the "SAME-FOLDER ALL-DOCUMENT DISPLAY FRAG" has been turned on. Accordingly, document A, for which an attachment in the storage area α (of the personal computer on the side transmitting the electronic mail) has been specified, and document B, which is contained in the same folder, are being displayed in the main window indicated at 620 in Fig. 6C.

It should be noted that the electronic mail system and electronic mail application being employed in this system are a well-known system and application.

Processing according to this embodiment will be described next.

Fig. 7 is a flowchart useful in describing processing for transmitting an access key according to this embodiment. The flowchart of Fig. 7 will be referred to in order to describe processing executed by the central processing unit 303 of this system for creating an access-key file and for attaching the created access-key file to electronic mail in a case where a document is dropped onto the icon of the electronic mail application. It will be assumed in this embodiment that the user of the personal computer 201 attaches document information in the database server 203 to electronic mail and sends this electronic mail to the

user of the personal computer 202, that the electronic mail in such case is accumulated in the electronic mail server 204 and that the electronic mail server 204 notifies the personal computer 202 of the fact the electronic mail arrived. Alternatively, it will be assumed that the electronic mail is sent from the electronic mail server 204 to the user of the personal computer 202

First, at step S101 in Fig. 7, the absolute storage location of a document (document A in storage area α in this example) specified by the operation illustrated in Fig. 3 is acquired through the central processing unit 312 of the database server 310 via the network interfaces 306 and 311. Next, at step S102, the privilege to access this document is acquired at step S102 in a manner similar to that of step S101. Then, at step S103, the privilege to access the folder containing this document is acquired through a similar procedure.

This is followed by step S104, at which the access-key configuration screen 500 is displayed to allow the user to enter the conditions for creation of the access key. It should be noted that the access privilege 502 is restricted so as not to be less stringent than the conditions acquired at step S102. For example, if the document access privilege acquired at step S102 is only "READ", then "READ/WRITE" in access privilege area 502

is dimmed beforehand to make the selection thereof impossible. Similarly, if the folder access privilege acquired at step S103 is "DISPLAY APPLICABLE DOCUMENT ONLY", then the check box of area 503 is dimmed
5 beforehand to make selection thereof impossible.

Next, at step S104a, the ID of the selected document is acquired in a format that includes the version. Furthermore, if the "SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG" is ON, then the IDs of all documents
10 present in the same folder are acquired in a format that includes the versions.

This is followed by step S105, at which it is determined whether "ACCESS-KEY USER" has been specified as the user name in area 501 of Fig. 4. If the decision
15 is "NO", then control proceeds to step S107. If, on the other hand, it is found at step S105 that "ACCESS-KEY USER" has been specified as the user name, control proceeds to step S106. Here the password of "ACCESS-KEY USER" is acquired through the central processing unit
20 312 of database server 310.

An access-key file of the kind shown in Fig. 5 is created at step S107 based upon the information obtained above and the file is subjected to compression processing. The compressed access-key file is attached
25 to the electronic mail application at step S108 and the electronic mail is transmitted at step S109. It should

be noted that the operation at step S109 may be executed on the side of the electronic mail application.

Thus, an access-key file corresponding to a desired document is transmitted by electronic mail.

5 Described next with reference to Figs. 8A and 8B will be document display processing executed by the central processing unit 303 of this system in a case where the icon 614 corresponding to the access-key file has been dropped on the at-a-glance display area 601
10 from the attachment data area 613 of the electronic mail application at the apparatus on the side that receives the electronic mail. Figs. 8A and 8B are flowcharts illustrating document display processing based upon the access key. In this example, the processing described
15 is that executed when electronic mail that has been attached by the user of the personal computer 201 is stored in the electronic mail server 204, the electronic mail server 204 notifies the user of the personal computer 202 that there is incoming electronic mail, the
20 user of the personal computer 202 opens this electronic mail and displays the document in accordance with the access key.

The compressed access-key file corresponding to the icon 614 is uncompressed, the access content (access
25 information) that has been saved in this file is acquired and the content is stored in memory 305 at step

S701. This is followed by step S702, at which it is determined whether the date of operation falls within the period indicated by "KEY-FILE VALIDITY DATE" in the access content. If the date of operation falls outside
5 this period, and error message is displayed at step S710 and processing is terminated. If it is determined at step S702 that the date of operation falls within the period of validity, then it is determined at step S703 whether the user name is contained in the access
10 content. If the access content does not have the user name (in case of "NONE" for user name), this means that the document can be referred to only by a registered user. At step S704, therefore, a display for entering the user name and password is displayed to allow the
15 user to set the same.

This is followed by step S705, at which log-in to the database is performed based upon the content that has been saved in the access key and the content that has been entered at step S704. In a case where the user
20 name 501 has been set, log-in to the database is performed based upon the user name and password contained in the access-key format 510 (Fig. 5). Next, it is determined at step S706 whether log-in succeeded. If log-in failed, an error message is displayed at step
25 S710 and processing is terminated. If it is determined at step S706 that log-in succeeded, the specified

accordance with the thumbnail format, a thumbnail image of the document is displayed in the at-a-glance display area 601. If the method of presenting the display in the main window is in accordance with the list format, 5 the content of a list is displayed in the at-a-glance display area 601. The thumbnail image (or item in the list) corresponding to the applicable document is displayed in such a manner that it can be distinguished as being the specified document. In this example, it is 10 assumed that the applicable thumbnail image enclosed by a red border.

If it is determined at step S708b that the two items of version information do not match, control proceeds to step S709a, at which a display to the effect 15 that the document cannot be displayed is presented. Control then proceeds to step S711. In order to indicate at step S709a that the applicable document could not be accessed, the thumbnail image is displayed in black in the thumbnail mode and an indication to the 20 effect that the document is inaccessible is displayed in the case of the list display.

It is determined at step S711 whether "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has been set in the access content. If it has not been set, processing is 25 terminated. If it is determined at step S711 that "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has

been set, then the next document in the same folder is read in at step S712 while taking into consideration also the document ID value at the same storage location as that of the applicable document in the access key.

- 5 It is determined at step S713 whether read-in succeeded and, if failure is the decision, then control proceeds to step S714a. This means that the document has been deleted. If the decision rendered at step S713 is that read-in succeeded, then it is determined at step S713a
- 10 whether the all-version flag is ON or not. If the all-version flag is ON, i.e., if a version check will not be carried out, control proceeds directly to step S714. On the other hand, if the all-version flag is found to be OFF at step S713a, i.e., if a version check will be
- 15 carried out, control proceeds to step S713b. Here it is determined whether the version information of the ID that has been stored in the access key matches. Control proceeds to step S714a if a match is not achieved.

- The document is displayed at step S714 in
- 20 accordance with the display format. In order to indicate at step S714a that the applicable document could not be accessed, the thumbnail image is displayed in black in the thumbnail mode and an indication to the effect that the document is inaccessible is displayed in
- 25 the case of the list display. This is followed by step S715, at which it is determined whether all documents in

the same folder have been read in, while taking into consideration also the document ID value at the same storage location as that of the applicable document in the access key. Processing is terminated if it is
 5 determined that all documents have been read in. If it is determined at step S715 that all documents have not been read in, processing from step S712 onward is repeated.

In the case of the thumbnail display mode in the
 10 processing described above, a folder ("α" in Fig. 6C) separate from the folder currently created as shown in Fig. 6C can be created and displayed inside, thereby making it possible to display the folder separately of the area currently open.

By virtue of the foregoing processing, icons or
 15 list items of a plurality of documents are displayed in a case where "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has been specified. However, since the icon or list item of a specified document is enclosed by a red
 20 border, as mentioned earlier, the user can distinguish this document at a glance.

In accordance with the above embodiment, as described above, only information such as the storage location of a document or the access privilege can be
 25 transmitted as an access key by electronic mail to another person without transmitting the actual document

005412.030100

or a file that has been converted to an image, whereby it becomes possible to display, in a simple manner, the stored document based upon the access key that has been received.

5 Further, only the storage location (text data) of a document can be transmitted as the main body of electronic mail to another person, and the stored document can be acquired and displayed in a simple manner based upon the storage location that has been
10 received.

Furthermore, even if a person is not registered as a user with a database in which a document has been stored, it is possible to access the document through an access-key user that has been assigned to an access key.

15 The foregoing embodiment describes an operation performed in a thumbnail display area. However, if a similar operation is performed in a list display area, similar results will be displayed based upon the list display.

20 Further, it is possible to obtain a set-up in which only the same version of a document identical with a document designated by the transmitting party can be accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is OFF and,
25 moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is ON].

Further, it is possible to obtain a set-up in which any version only of a document identical with a document designated by the transmitting party can be accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-
5 VERSION ACCESS ENABLE (508) FLAG" is ON and, moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is OFF].

Further, it is possible to obtain a set-up that allows access only to all documents of the same version,
10 which exist when the transmitting party specifies a document, in a folder that same as that of the document when the transmitting party specifies the document. In other words, it is possible to construct an environment identical with that of the document being accessed by
15 the transmitting party [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is OFF and, moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is ON].

Further, it is possible to obtain a set-up in which
20 all documents of all versions that exist in a folder the same as that of the document specified by the transmitting party is accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is ON and, moreover, the "SAME-FOLDER ALL-DOCUMENT
25 DISPLAY (503) FLAG" is ON].

According to the embodiment, it is assumed that the

side storing the documents retains all versions.
However, the present invention is applicable also in a
case where, when update processing has been applied to
documents, only the latest documents remain. This
5 merely represents a state in which only the latest
versions of documents are available.

It goes without saying that the object of the
invention is attained by supplying a storage medium
storing the program codes of the software for performing
10 the functions of the foregoing embodiment to a system or
an apparatus, reading the program codes with a computer
(e.g., a CPU or MPU) of the system or apparatus from the
storage medium, and then executing the program codes.

In this case, the program codes read from the
15 storage medium implement the functions of the
embodiment, and the storage medium storing the program
codes constitutes the invention. By reading the program
into the system or apparatus from the storage medium,
the system or apparatus will operate in accordance with
20 a predetermined method.

Further, the storage medium for supplying the
program code can employ a floppy disk, hard disk,
optical disk, magneto-optical disk, CD-ROM, CD-R,
magnetic tape, non-volatile type memory card or ROM.

25 Furthermore, besides the case where the aforesaid
functions according to the embodiments are implemented

It goes without saying that the present invention further covers a case where, after the program codes read from the storage medium are written in a function expansion board inserted into the computer or in a memory provided in a function expansion unit connected to the computer, a CPU or the like contained in the function expansion board or function expansion unit performs a part of or the entire process in accordance with the designation of program codes and implements the function of the above embodiment.

In a case where the present invention is applied to the storage medium, program code corresponding to the flowcharts described earlier in Figs. 7, 8A and 8B is stored on this storage medium.

Thus, in accordance with the present invention, as described above, it is possible to transmit access information such as the storage location and access privilege of a document without transmitting the actual document or a file in which the document has been converted to an image as the access-key file by using

at-a-glance display, in a thumbnail or list format, of documents that are present in a specific storage area, and for displaying an icon corresponding to an electronic mail application that is for generating and transmitting electronic mail;

wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

6. The apparatus according to claim 1, wherein said acquisition means has setting means for allowing a user to set access information via a prescribed user interface.

7. The apparatus according to claim 1, wherein said acquisition means sets an access key, which is for enabling access to the object, as part of the access information.

8. The apparatus according to claim 1, further comprising setting means for setting, as part of the access information, permission to access all object files in a storage area of an object that has been designated by said designating means.

9. The apparatus according to claim 1, further comprising setting means for setting, as part of the access information, permission to access other versions of an object that has been designated by said designating means.

10. An information processing apparatus capable of receiving electronic mail, comprising:

extraction means for extracting access information contained in electronic mail that has been received;

5 access means for accessing an object based upon the access information extracted by said extraction means; and

display means for presenting a display that corresponds to the object based upon content of the object accessed by said access means.

11. The apparatus according to claim 10, wherein said display means presents either a thumbnail display or a list display regarding objects accessed by said access means.

15 12. The apparatus according to claim 10, wherein the access information contains enabling information indicating whether it is permissible to access another object present at a storage location to which said object belongs;

20 said access means accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

said display means presents an at-a-glance display relating to an object present at said storage location
25 based upon results of accessing performed by said access means.

13. The apparatus according to claim 12, further comprising:

selection means for selecting a desired object from the at-a-glance display; and

5 content display means for displaying content of an object that has been selected by said selection means.

14. The apparatus according to claim 10, wherein the access information contains enabling information indicating whether it is permissible to access another

10 version of said object;

said access means accesses an object which is another version of said object in a case where the enabling information permits access to the other version; and

15 said display means presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed by said access means.

15. The apparatus according to claim 14, further comprising:

20 selection means for selecting a desired object from the at-a-glance display; and

content display means for displaying content of an object that has been selected by said selection means.

16. The apparatus according to claim 10, wherein said

25 extraction means extracts the access information from a file that has been attached to electronic mail.

17. The apparatus according to claim 10, wherein said extraction means extracts the access information from the main body of electronic mail.

18. The apparatus according to claim 10, wherein the
5 access information includes position information for specifying a storage location at which said object is present, and an access key for obtaining privilege to access an object at said storage location; and

using the access key, said access means accesses
10 said object at the storage location specified by the position information

19. The apparatus according to claim 18, wherein the access key is information for logging in to said storage location.

- 15 20. An information processing system in which electronic mail can be sent and received between information processing apparatus, comprising:

generating means for generating electronic mail
information which includes access information relating
20 to an object to be attached to electronic mail;

communication means for sending and receiving the electronic mail information generated by said generating means; and

- access means for accessing the object based upon
25 the access information contained in the electronic mail information received via said communication means.

21. The system according to claim 20, wherein said generating means includes:

designating means for designating a desired object to be attached to electronic mail;

5 acquisition means for acquiring access information relating to the object designated by said designating means; and

mail information generating means for generating electronic mail information in which the access
10 information acquired by said acquisition means constitutes part of the electronic mail.

22. The system according to claim 21, wherein said mail information generating means generates an attachment file which includes the access information acquired by
15 said acquisition means and attaches the generated attachment file to electronic mail that is to be transmitted.

23. The system according to claim 21, wherein said mail information generating means affixes the access
20 information, which has been acquired by said acquisition means, to the main body of electronic mail that is to be transmitted.

24. The system according to claim 21, wherein the access information includes information indicating
25 storage location of the object, which has been designated by said designating means, in the system.

30. The system according to claim 20, wherein said communication means transmits the electronic mail

5 information, which has been generated by said generating means, to an information processing apparatus that has been designated.

31. The system according to claim 20, wherein said access means includes:

10 extraction means for extracting the access
information contained in electronic mail that has been
received;

object access means for accessing an object based upon the access information extracted by said extraction

15 means: and

display means for presenting a display that corresponds to the object based upon content of the object accessed by said access means.

32. The system according to claim 31, wherein said
20 display means presents either a thumbnail display or a
list display regarding objects accessed by said access
means.

33. The system according to claim 31, wherein the
access information contains enabling information
25 indicating whether it is permissible to access another
object present at a storage location to which said

object belongs;

said access means accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

- 5 said display means presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed by said access means.

34. The system according to claim 33, further
10 comprising:

selection means for selecting a desired object from the at-a-glance display; and

content display means for displaying content of an object that has been selected by said selection means.

- 15 35. The system according to claim 31, wherein the access information contains enabling information indicating whether it is permissible to access another version of said object;

- said access means accesses an object which is
20 another version of said object in a case where the enabling information permits access to the other version; and

- said display means presents an at-a-glance display inclusive of the other version of said object based upon
25 results of accessing performed by said access means.

36. The system according to claim 35, further

comprising:

selection means for selecting a desired object from the at-a-glance display; and

content display means for displaying content of an
5 object that has been selected by said selection means.

37. The system according to claim 31, wherein said extraction means extracts the access information from a file that has been attached to electronic mail.

38. The system according to claim 31, wherein said
10 extraction means extracts the access information from the main body of electronic mail.

39. The system according to claim 31, wherein the access information includes position information for specifying a storage location at which said object is
15 present, and an access key for obtaining privilege to access an object at said storage location; and

using the access key, said object access means accesses said object at the storage location specified by the position information

20 40. The system according to claim 39, wherein the access key is information for logging in to said storage location.

41. An information processing method in an apparatus capable of transmitting electronic mail, said method
25 comprising:

a designating step of designating a desired object

to be attached to electronic mail;

an acquisition step of acquiring access information relating to the object designated at said designating step; and

5 a generating step of generating electronic mail information which includes the access information acquired at said acquisition step.

42. The method according to claim 41, wherein said
10 generating step generates an attachment file which includes the access information acquired at said acquisition step and attaches the generated attachment file to electronic mail that is to be transmitted.

43. The method according to claim 41, wherein said
15 generating step affixes the access information, which has been acquired at said acquisition step, to the main body of electronic mail that is to be transmitted.

44. The method according to claim 41, wherein the
20 access information includes information indicating storage location of the object, which has been designated at said designating step, in a system.

45. The method according to claim 41, wherein said
designating step includes a display step of presenting an at-a-glance display, in a thumbnail or list format, of documents that are present in a specific storage
25 area, and of displaying an icon corresponding to an electronic mail application that is for generating and

transmitting electronic mail;

wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

5 46. The method according to claim 41, wherein said acquisition step includes a setting step of allowing a user to set access information via a prescribed user interface.

47. The method according to claim 41, wherein said
10 acquisition step sets an access key, which is for enabling access to the object, as part of the access information.

48. The method according to claim 41, further comprising a setting step of setting, as part of the
15 access information, permission to access all object files in a storage area of an object that has been designated at said designating step.

49. The method according to claim 41, further comprising a setting step of setting, as part of the
20 access information, permission to access other versions of an object that has been designated at said designating step.

50. An information processing method in an apparatus capable of receiving electronic mail, said method
25 comprising:

an extraction step of extracting access information

contained in electronic mail that has been received;

an access step of accessing an object based upon the access information extracted at said extraction step; and

5 a display step of presenting a display that corresponds to the object based upon content of the object accessed at said access step.

51. The method according to claim 50, wherein said display step presents either a thumbnail display or a
10 list display regarding objects accessed at said access step.

52. The method according to claim 50, wherein the access information contains enabling information indicating whether it is permissible to access another
15 object present at a storage location to which said object belongs;

said access step accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

20 said display step presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed at said access step.

53. The method according to claim 52, further
25 comprising:

a selection step of selecting a desired object from

the at-a-glance display; and

a content display step of displaying content of an object that has been selected at said selection step.

54. The method according to claim 50, wherein the
5 access information contains enabling information indicating whether it is permissible to access another version of said object;

said access step accesses an object which is another version of said object in a case where the
10 enabling information permits access to the other version; and

said display step presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed at said access step.

15 55. The method according to claim 54, further comprising:

a selection step of selecting a desired object from the at-a-glance display; and

a content display step of displaying content of an
20 object that has been selected at said selection step.

56. The method according to claim 50, wherein said extraction step extracts the access information from a file that has been attached to electronic mail.

57. The method according to claim 50, wherein said
25 extraction step extracts the access information from the main body of electronic mail.

58. The method according to claim 50, wherein the access information includes position information for specifying a storage location at which said object is present, and an access key for obtaining privilege to
5 access an object at said storage location; and

using the access key, said access step accesses said object at the storage location specified by the position information

59. The method according to claim 58, wherein the
10 access key is information for logging in to said storage location.

60. A method of controlling an information processing system in which electronic mail can be sent and received between information processing apparatus, said method
15 comprising:

a generating step of generating electronic mail information which includes access information relating to an object to be attached to electronic mail;

a communication step of sending and receiving the
20 electronic mail information generated at said generating step; and

an access step of accessing the object based upon the access information contained in the electronic mail information received via said communication step.

61. The method according to claim 60, wherein said
25 generating step includes:

a designating step of designating a desired object to be attached to electronic mail;

an acquisition step of acquiring access information relating to the object designated at said designating

5 step; and

mail information generating step of generating electronic mail information in which the access information acquired at said acquisition step constitutes part of the electronic mail.

10 62. The method according to claim 61, wherein said mail information generating step generates an attachment file which includes the access information acquired by said acquisition step and attaches the generated attachment file to electronic mail that is to be transmitted.

15 63. The method according to claim 61, wherein said mail information generating step affixes the access information, which has been acquired at said acquisition step, to the main body of electronic mail that is to be transmitted.

20 64. The method according to claim 61, wherein the access information includes information indicating storage location of the object, which has been designated at said designating step, in the system.

65. The method according to claim 61, wherein said
25 designating step includes a display step of presenting an at-a-glance display, in a thumbnail or list format,

of documents that are present in a specific storage area, and of displaying an icon corresponding to an electronic mail application that is for generating and transmitting electronic mail;

5 wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

66. The method according to claim 61, wherein said acquisition step includes a setting step of allowing a
10 user to set access information via a prescribed user interface.

67. The method according to claim 61, wherein said acquisition step sets an access key, which is for enabling access to the object, as part of the access
15 information.

68. The method according to claim 61, further comprising a setting step of setting, as part of the access information, permission to access all object files in a storage area of an object that has been
20 designated at said designating step.

69. The method according to claim 61, further comprising a setting step of setting, as part of the access information, permission to access other versions of an object that has been designated at said
25 designating step.

70. The method according to claim 60, wherein said

communication step transmits the electronic mail information, which has been generated at said generating step, to an information processing apparatus that has been designated.

- 5 71. The method according to claim 60, wherein said access step includes:

an extraction step of extracting the access information contained in electronic mail that has been received;

- 10 an object access step of accessing an object based upon the access information extracted at said extraction step; and

a display step of presenting a display that corresponds to the object based upon content of the
15 object accessed at said access step.

72. The method according to claim 71, wherein said display step presents either a thumbnail display or a list display regarding objects accessed at said access step.

- 20 73. The method according to claim 71, wherein the access information contains enabling information indicating whether it is permissible to access another object present at a storage location to which said object belongs;

25 said access step accesses another object present at said storage location in a case where the enabling

information permits access to the other object; and

said display step presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed at said access

5 step.

74. The method according to claim 73, further comprising:

a selection step of selecting a desired object from the at-a-glance display; and

10 a content display step of displaying content of an object that has been selected at said selection step.

75. The method according to claim 71, wherein the access information contains enabling information indicating whether it is permissible to access another

15 version of said object;

said access step accesses an object which is another version of said object in a case where the enabling information permits access to the other version; and

20 said display step presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed at said access step.

76. The method according to claim 75, further comprising:

25 a selection step of selecting a desired object from the at-a-glance display; and

a content display step of displaying content of an object that has been selected at said selection step.

77. The method according to claim 71, wherein said extraction step extracts the access information from a

5 file that has been attached to electronic mail.

78. The method according to claim 71, wherein said extraction step extracts the access information from the main body of electronic mail.

79. The method according to claim 71, wherein the

10 access information includes position information for specifying a storage location at which said object is present, and an access key for obtaining privilege to access an object at said storage location; and

using the access key, said object access step

15 accesses said object at the storage location specified by the position information

80. The method according to claim 79, wherein the access key is information for logging in to said storage location.

20 81. The apparatus according to claim 1, further comprising setting means for setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said access information.

82. The apparatus according to claim 81, further comprising means for giving password to the unregistered user when it is set by said setting means that the unregistered user may be provided with the access
5 information.

83. The apparatus according claim 81, further comprising means for prohibiting the unregistered user from accessing the object when it is set by said setting means that the unregistered user is not provided with
10 the access information.

84. The system according to claim 21, further comprising setting means for setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said
15 access information.

85. The system according to claim 84, further comprising means for giving password to the unregistered user when it is set by said setting means that the unregistered user may be provided with the access
20 information.

86. The system according claim 84, further comprising means for prohibiting the unregistered user from

accessing the object when it is set by said setting means that the unregistered user is not provided with the access information.

87. The method according to claim 41, further
- 5 comprising a setting step of setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said access information.

88. The method according to claim 87, further
- 10 comprising a step of giving password to the unregistered user when it is set in the setting step that the unregistered user may be provided with the access information.

89. The method according claim 87, further comprising a
- 15 step of prohibiting the unregistered user from accessing the object when it is set by said setting means that the unregistered user is not provided with the access information.

90. The method according to claim 61, further
- 20 comprising a setting step of setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said

access information.

91. The method according to claim 90, further comprising a step of giving password to the unregistered user when it is set in the setting step that the
5 unregistered user may be provided with the access information.

92. The method according claim 90, further comprising a step of prohibiting the unregistered user from accessing the object when it is set by said setting means that the
10 unregistered user is not provided with the access information.

93. A computer-readable memory storing a control program for causing a computer to generate electronic mail, said control program having:

15 code of a designating step of designating a desired object to be attached to electronic mail;

code of an acquisition step of acquiring access information relating to the object designated at said designating step; and

20 code of a generating step of generating electronic mail information which includes the access information acquired at said acquisition step.

94. A computer-readable memory storing a control program for causing a computer to process received mail,

said control program having:

code of an extraction step of extracting access information contained in electronic mail that has been received;

- 5 code of an access step of accessing an object based upon the access information extracted at said extraction step; and

code of a display step of presenting a display that corresponds to the object based upon content of the

- 10 object accessed at said access step.

ABSTRACT OF THE DISCLOSURE

When a desired document file to be attached to electronic mail is designated, access information relating to the designated document file, e.g., access
5 information relating to the location of the document and privilege to access the document, is acquired. The access information is set by a user through a prescribed user interface. An attachment file which includes this access information is generated and electronic mail to
10 which the generated attachment file has been attached is transmitted. The receiving side acquires and views the corresponding document file in accordance with the attached access information.

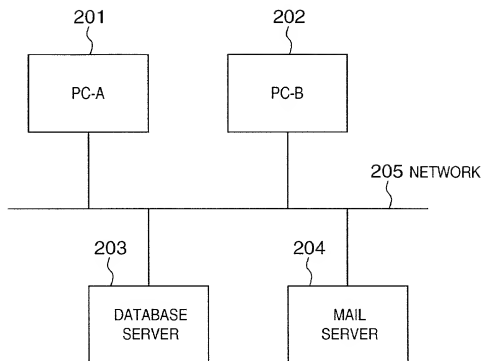
FIG. 1

FIG. 2

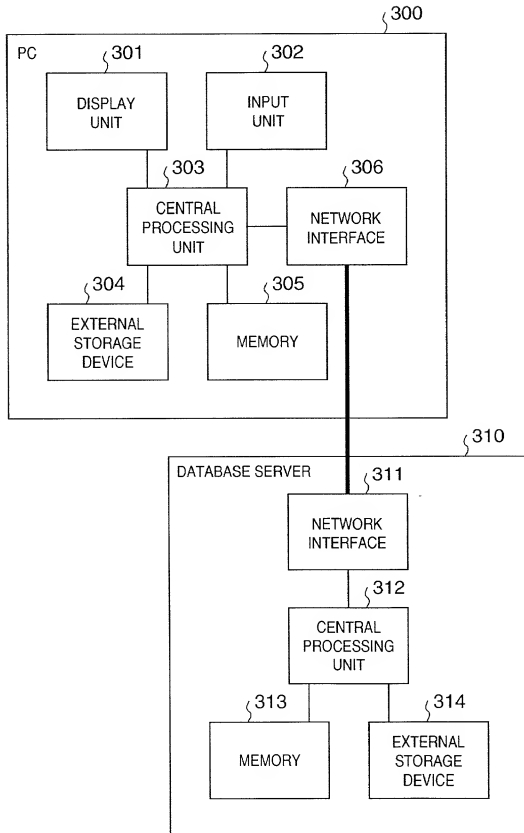


FIG. 3

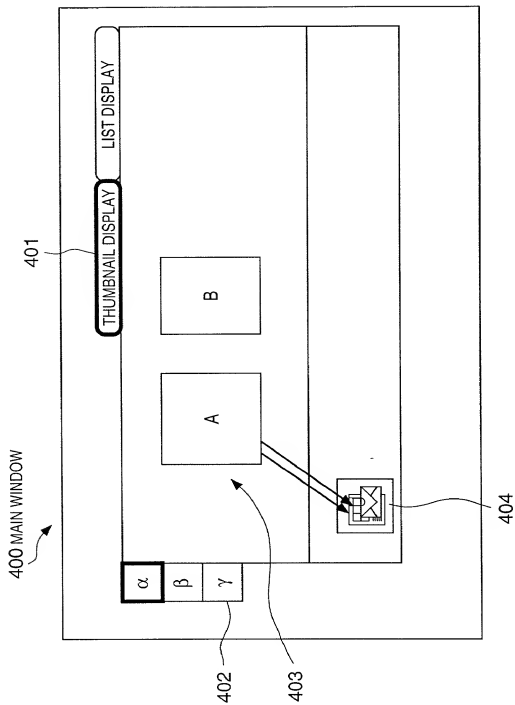
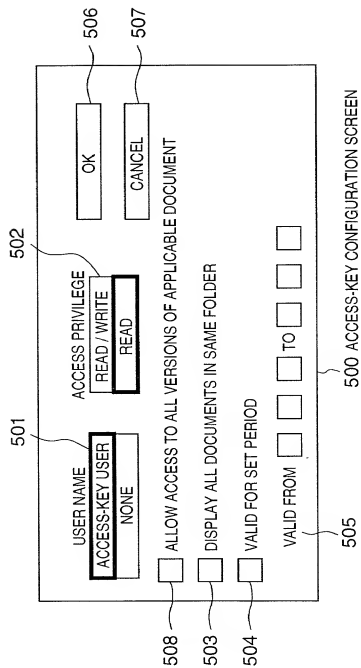


FIG. 4



510 ACCESS-KEY FORMAT PRIOR TO ENCRYPTION

ABSOLUTE STORAGE POSITION TO DOCUMENT
USER NAME
PASSWORD
ACCESS PRIVILEGE
APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE FLAG
SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG
KEY-FILE VALIDITY DATE
ID OF APPLICABLE DOCUMENT
ID OF DOCUMENT 1 IN STORAGE AREA IDENTICAL WITH THAT OF APPLICABLE DOCUMENT
ID OF DOCUMENT 2 IN STORAGE AREA IDENTICAL WITH THAT OF APPLICABLE DOCUMENT
⋮

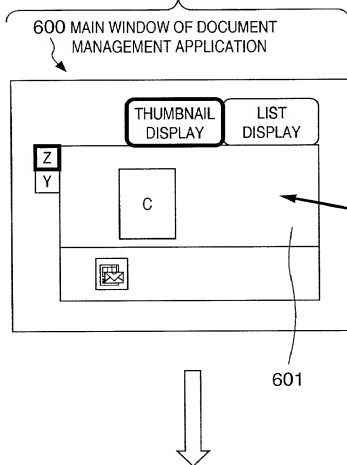
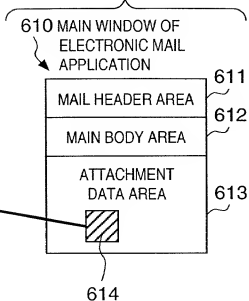
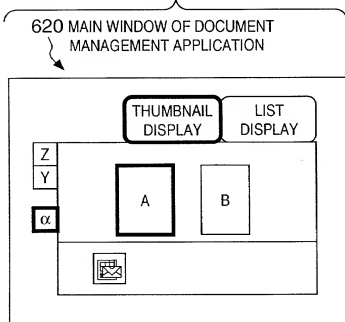
FIG. 6A**FIG. 6B****FIG. 6C**

FIG. 7

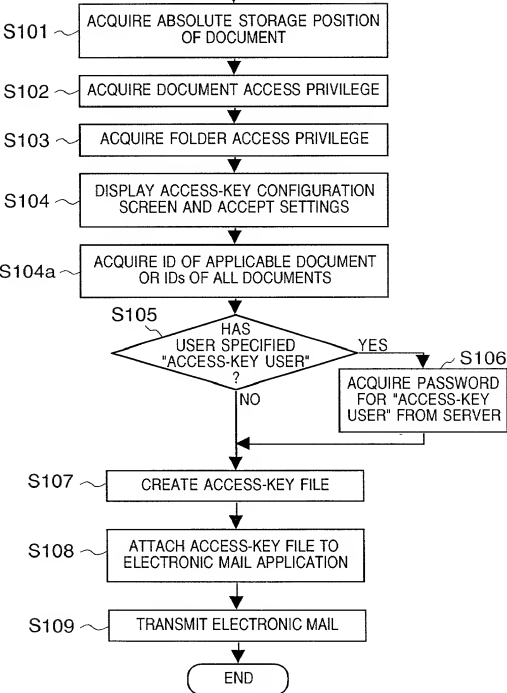


FIG. 8A

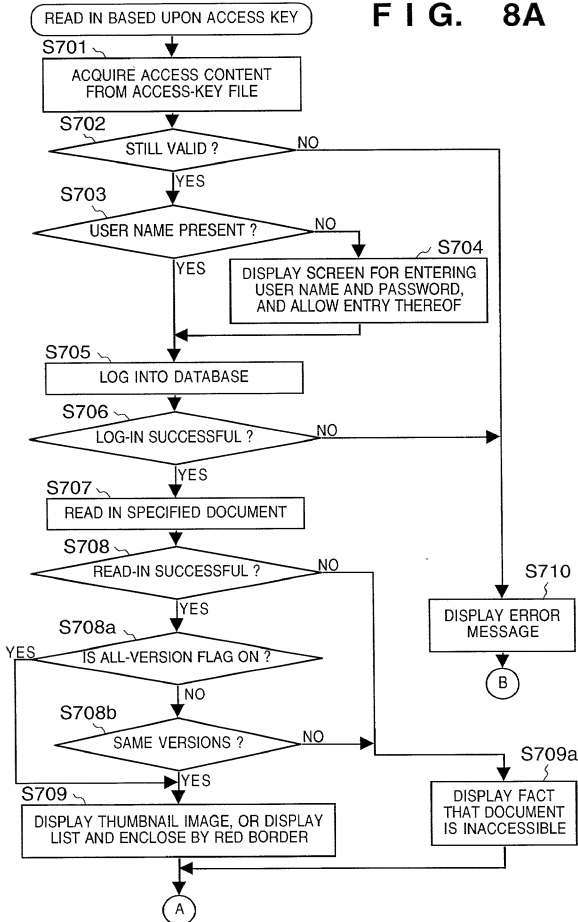
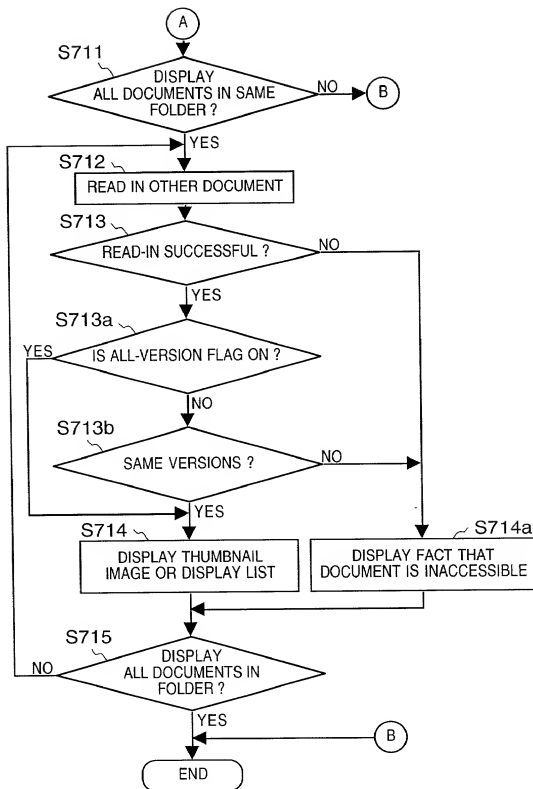


FIG. 8B



COMBINED DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled _____

INFORMATION PROCESSING APPARATUS, SYSTEM AND METHOD

the specification of which ☒ is attached hereto ☐ was filed on _____ as United States
Application No. or PCT International Application No. _____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended
by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b), of any foreign application(s) for patent or inventor's
certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below
and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date
before that of the application on which priority is claimed:

Country	Application No.	Filed (Day/Mo./Yr.)	(Yes/No) Priority Claimed
Japan	11-054626	March 2, 1999	Yes
Japan	2000-049691	February 25, 2000	Yes

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application
designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the
prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty
to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the
prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
-----------------	---------------------	---------------------------------------

N/A

I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and
to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address
associated with that Customer Number:

FITZPATRICK, CELLA, HARPER & SCINTO
Customer Number: 05514

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief
are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are
punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements
may jeopardize the validity of the application or any patent issued thereon

Full Name of Sole or First Inventor HIROYUKI FUJIYOSHI

Inventor's signature _____

Date _____ Citizen/Subject of Japan

Residence 1522-42, Hasamacho 3-chome, Funabashi-shi, Chiba-ken, Japan

Post Office Address c/o Canon Kabushiki Kaisha,

30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo, Japan